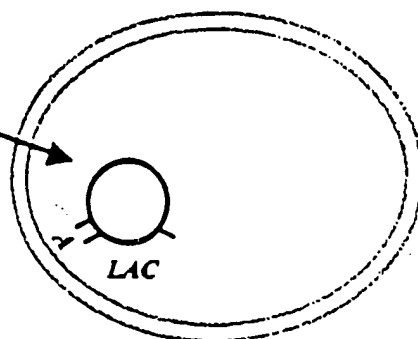
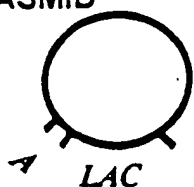
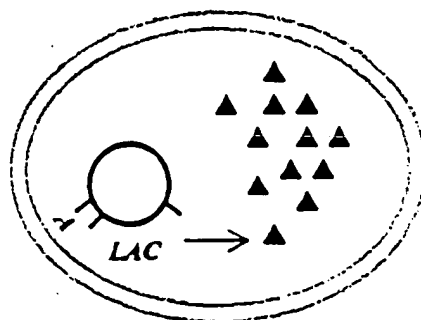


PLASMID



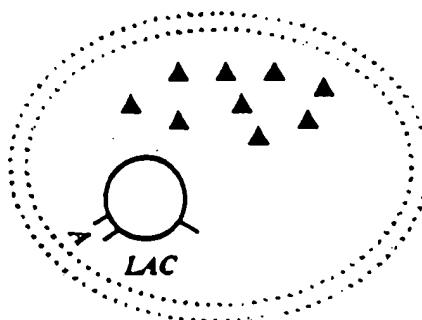
+ NISIN

LACTASE
INDUCTION



+ 35 - 50%
ETHANOL

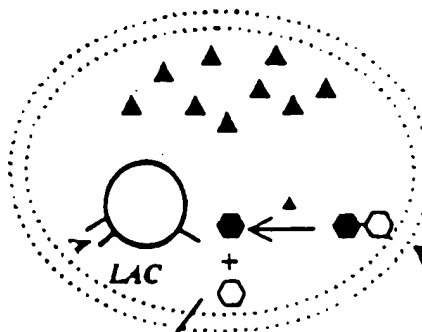
PERMEABILIZATION



MILK



LACTOSE
HYDROLYSIS



GLUCOSE

GALACTOSE

LACTOSE

FIG. 1

004040-24560

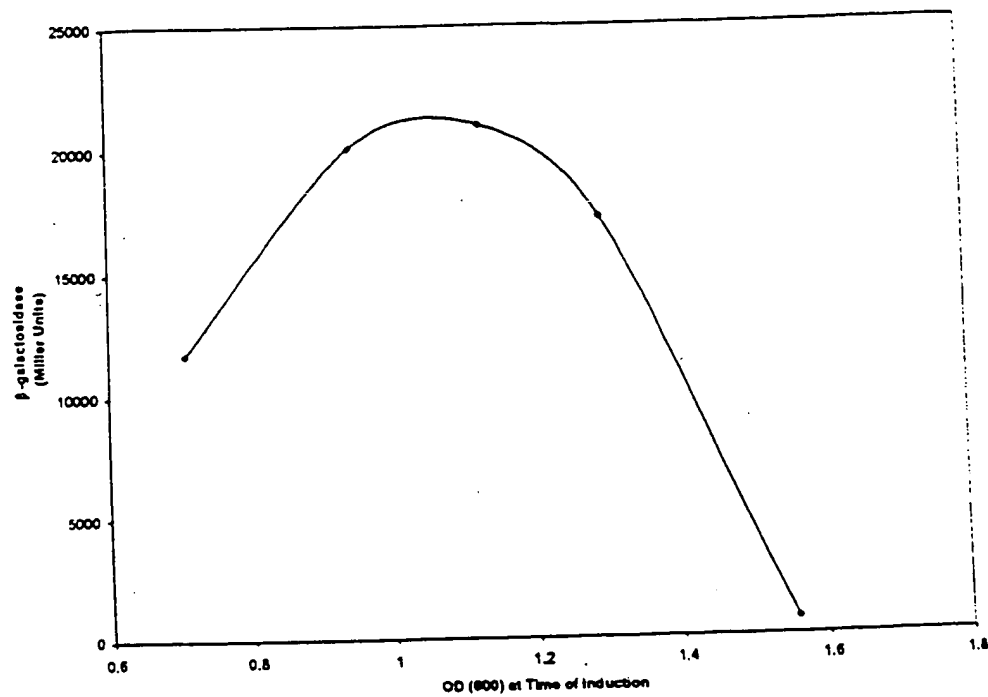


FIG. 2

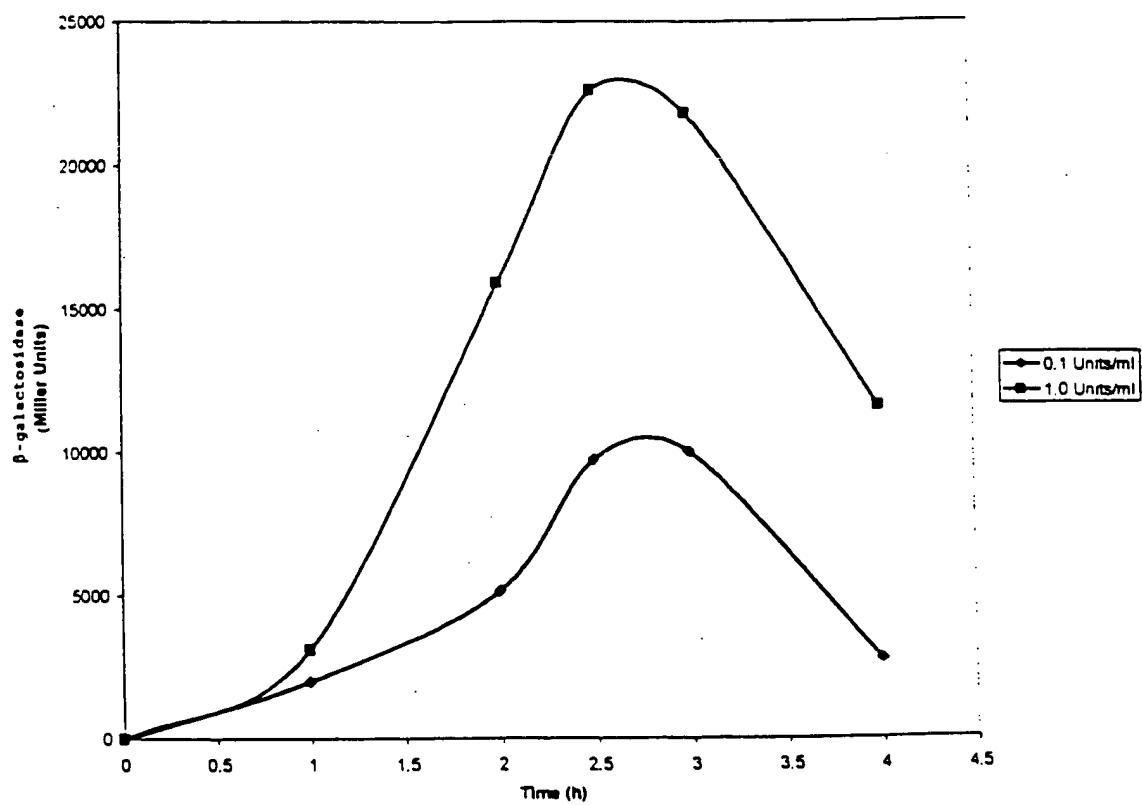


FIG. 3

004040 " 6 11 53 60

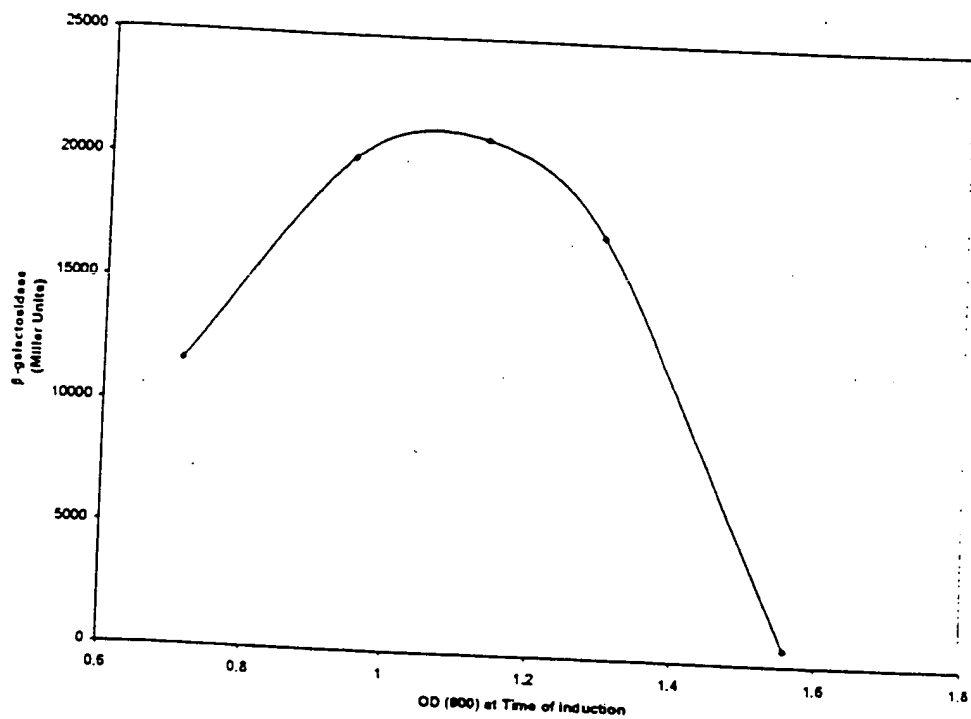


FIG. 4

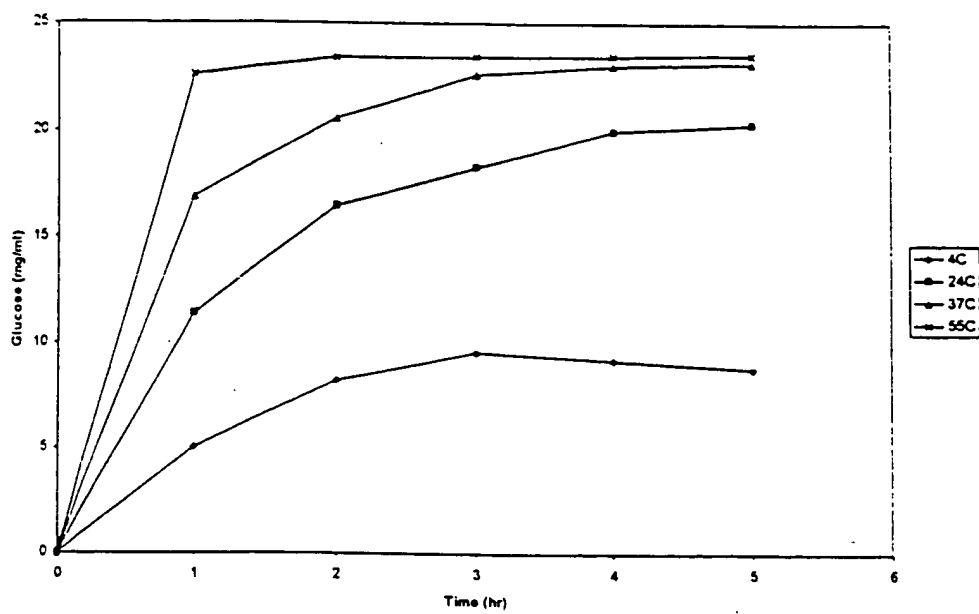


FIG. 5

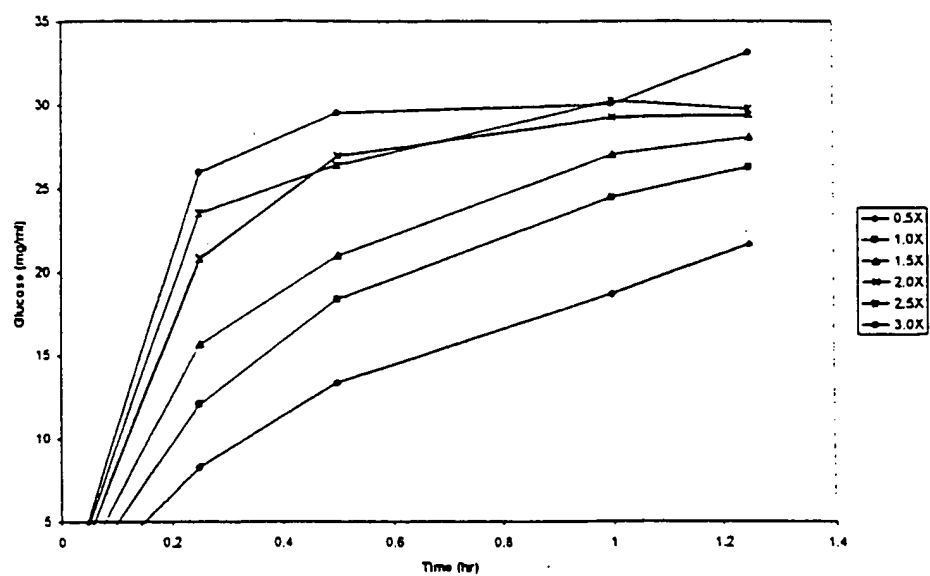


FIG. 6

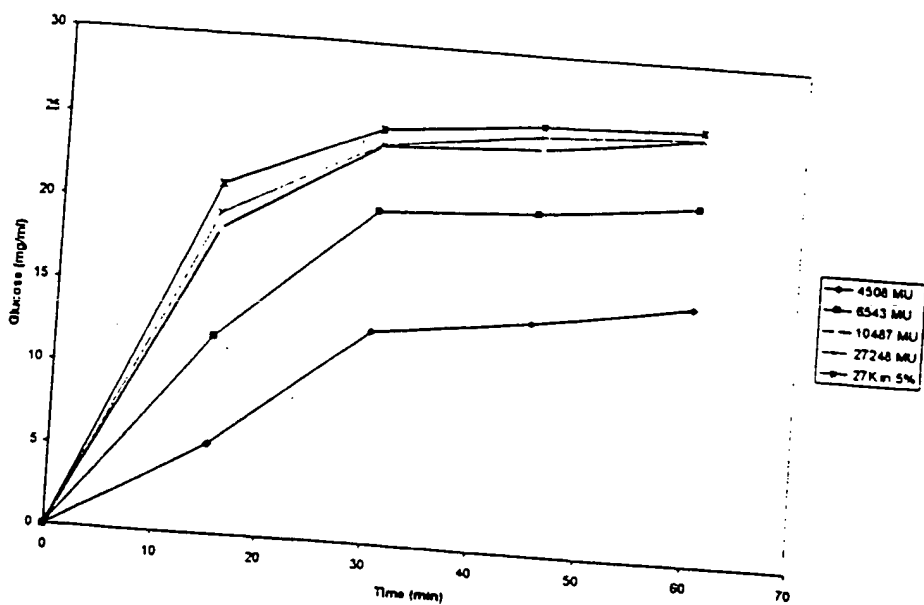


FIG. 7

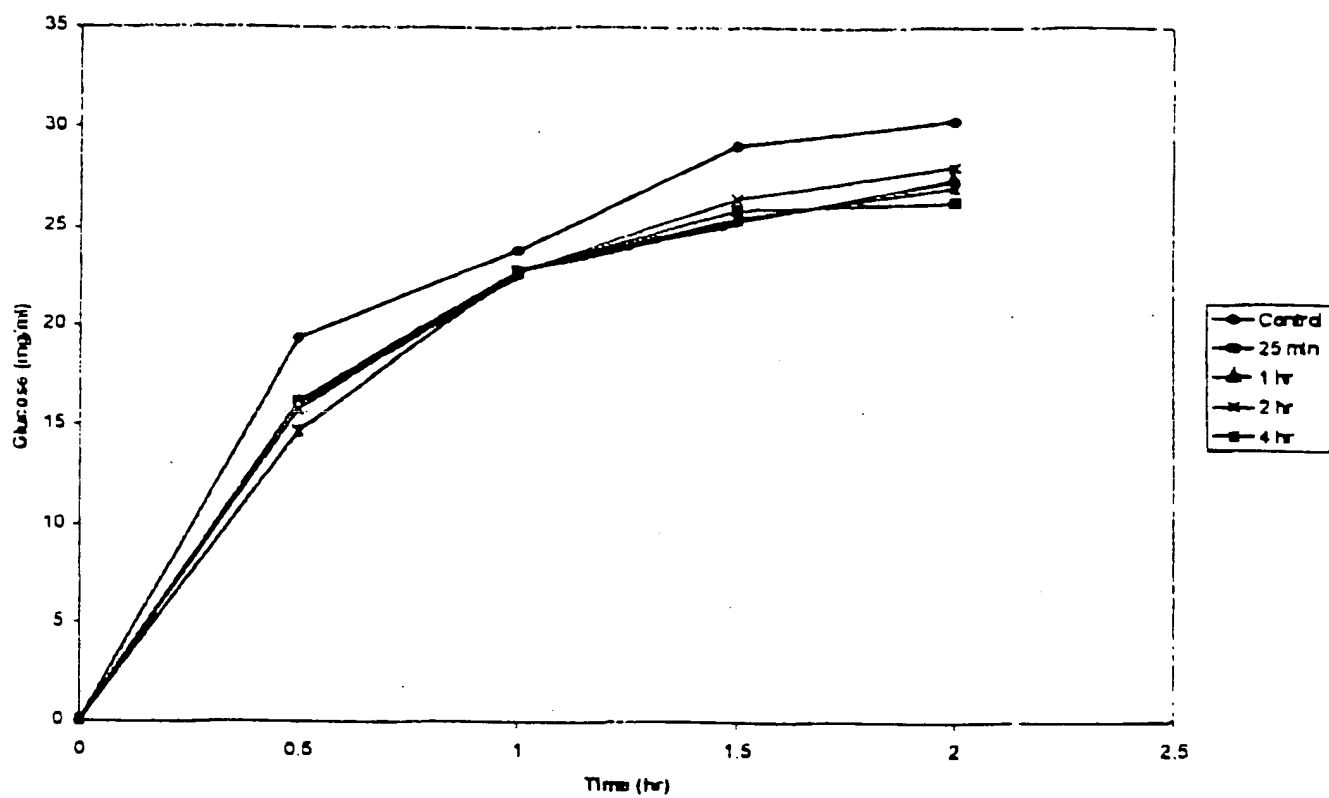


Figure 8.

004040 "T" 2450

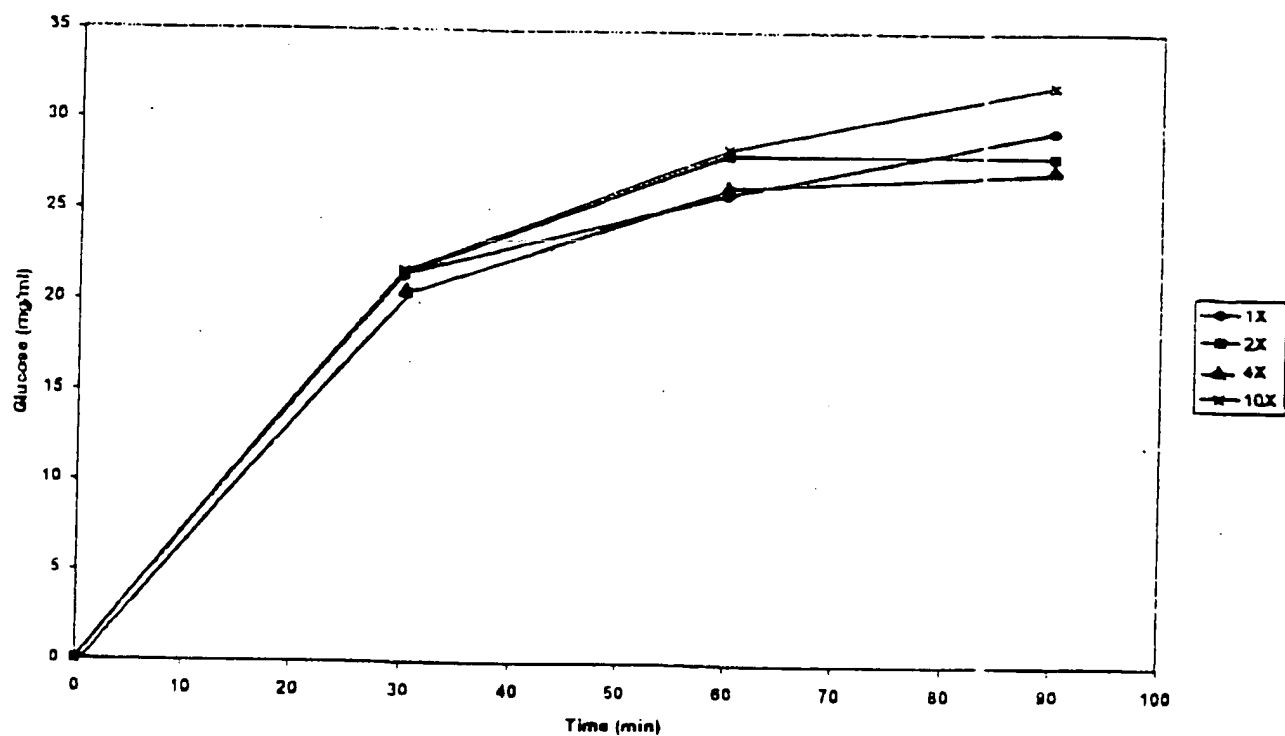


Figure 10.

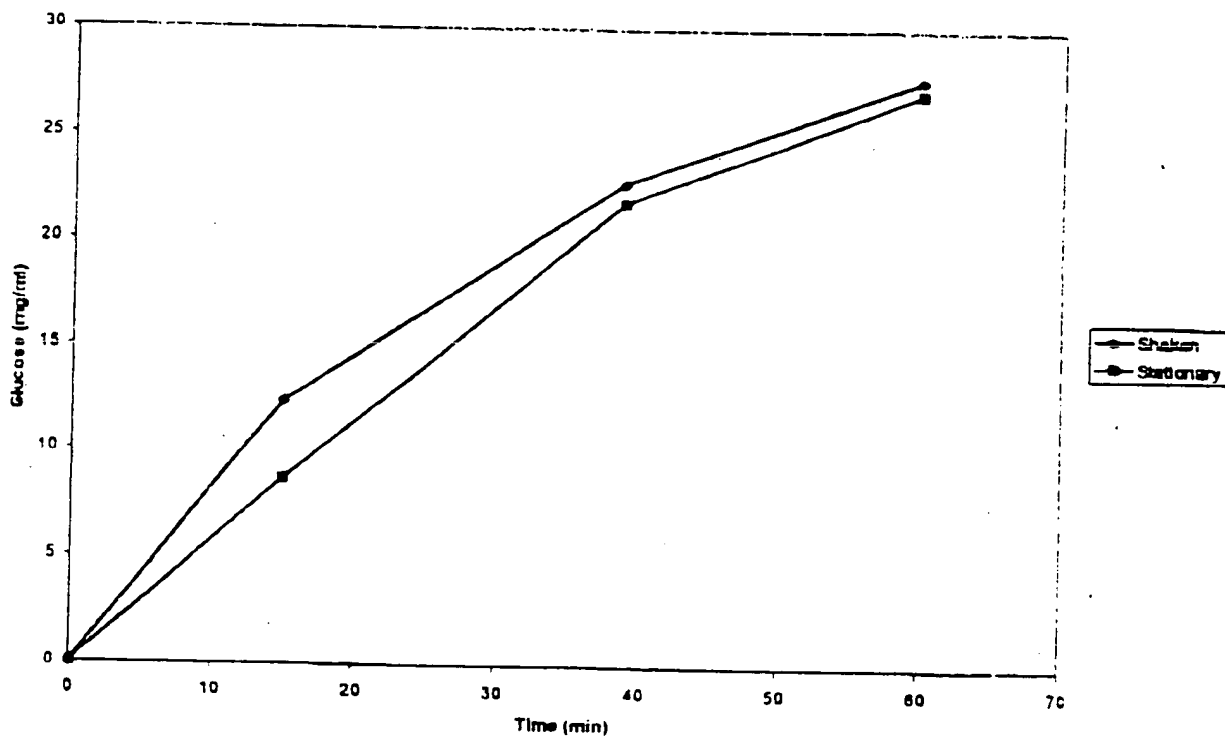
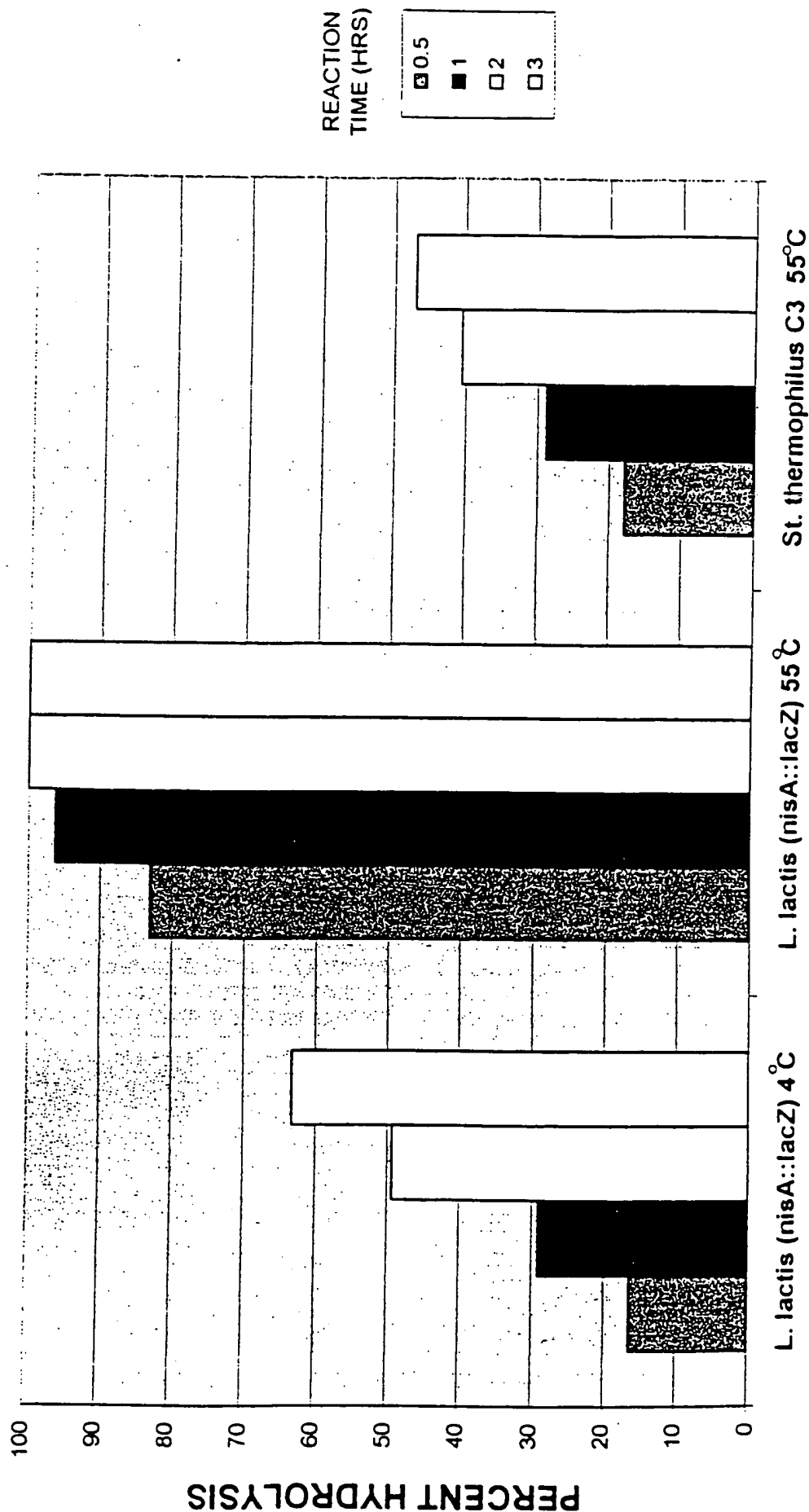


Figure 11.

COMPARISON OF LACTOSE HYDROLYSIS IN SKIM MILK BY *L. lactis* (nisA::lacZst) MICROCARRIERS AT 4°C AND 55°C VERSES *St. thermophilus* C3 MICROCARRIERS AT 55°C



ALL PERMEABILIZED CELLS (MICROCARRIERS)
 SUSPEND OD₆₀₀ = 1.55 IN SKIM MILK

**EFFECTS OF VARYING L.LACTIS (nisA::lacZ)
MICROCARRIER CONCENTRATION
ON SKIM MILK LACTOSE HYDROLYSIS AT 4 C**

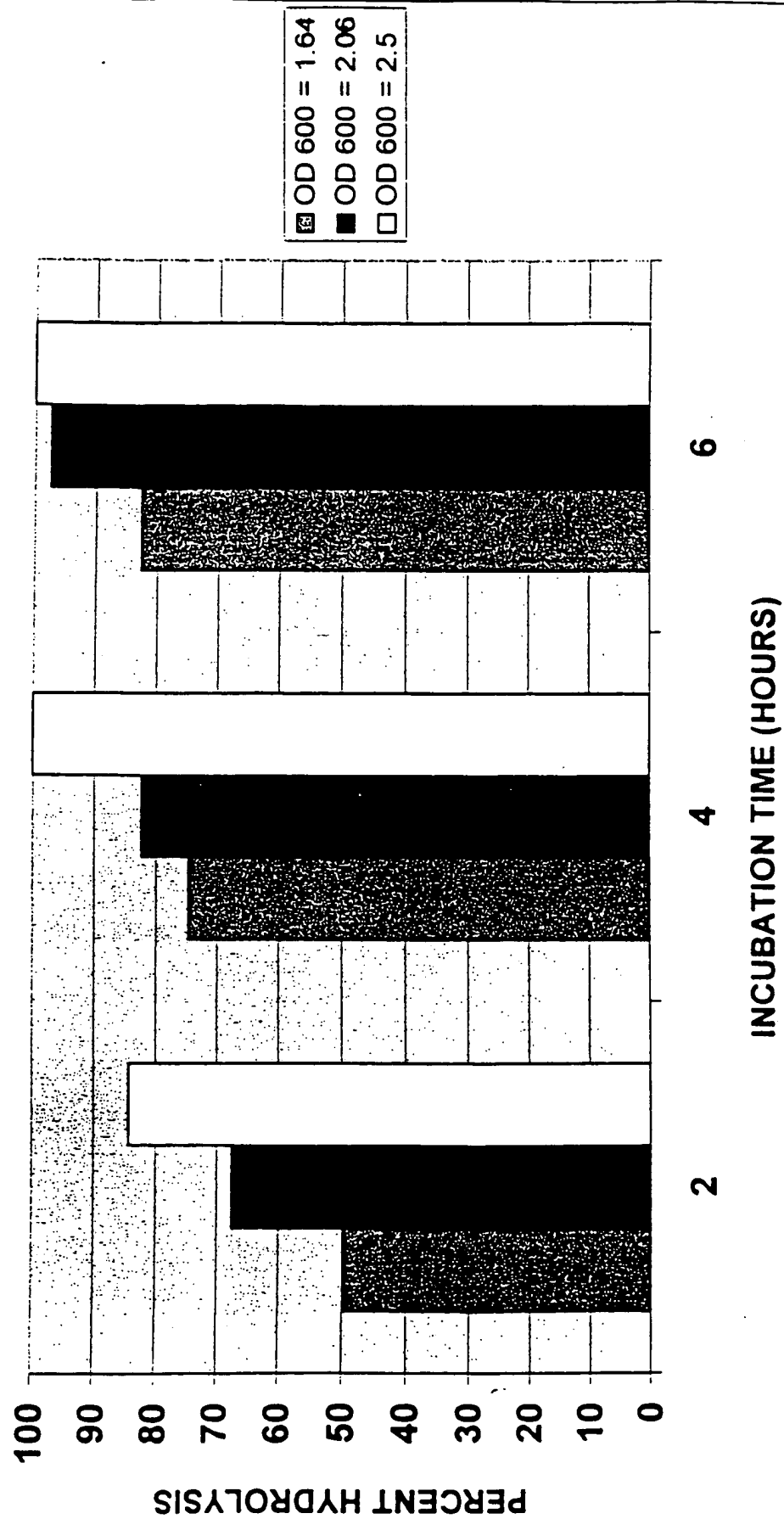


FIG. 13

EFFECTS OF STIRRING ON MILK LACTOSE HYDROLYSIS BY LACTASE-MICROCARRIERS AT 55° C

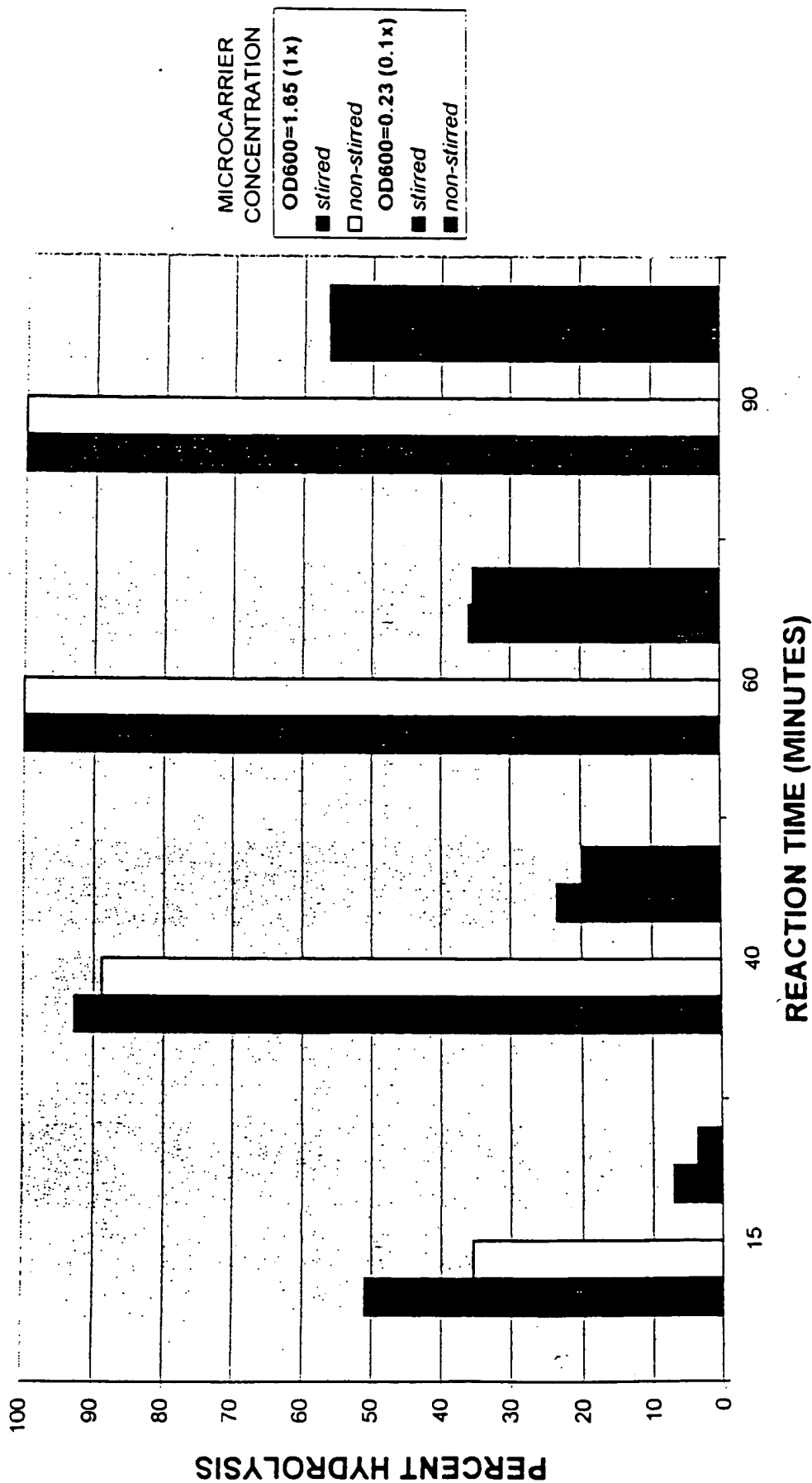


FIG. 14

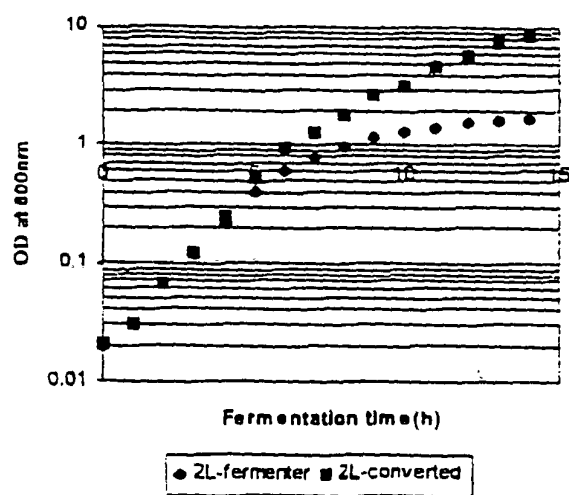


Figure 15

004040" F244560

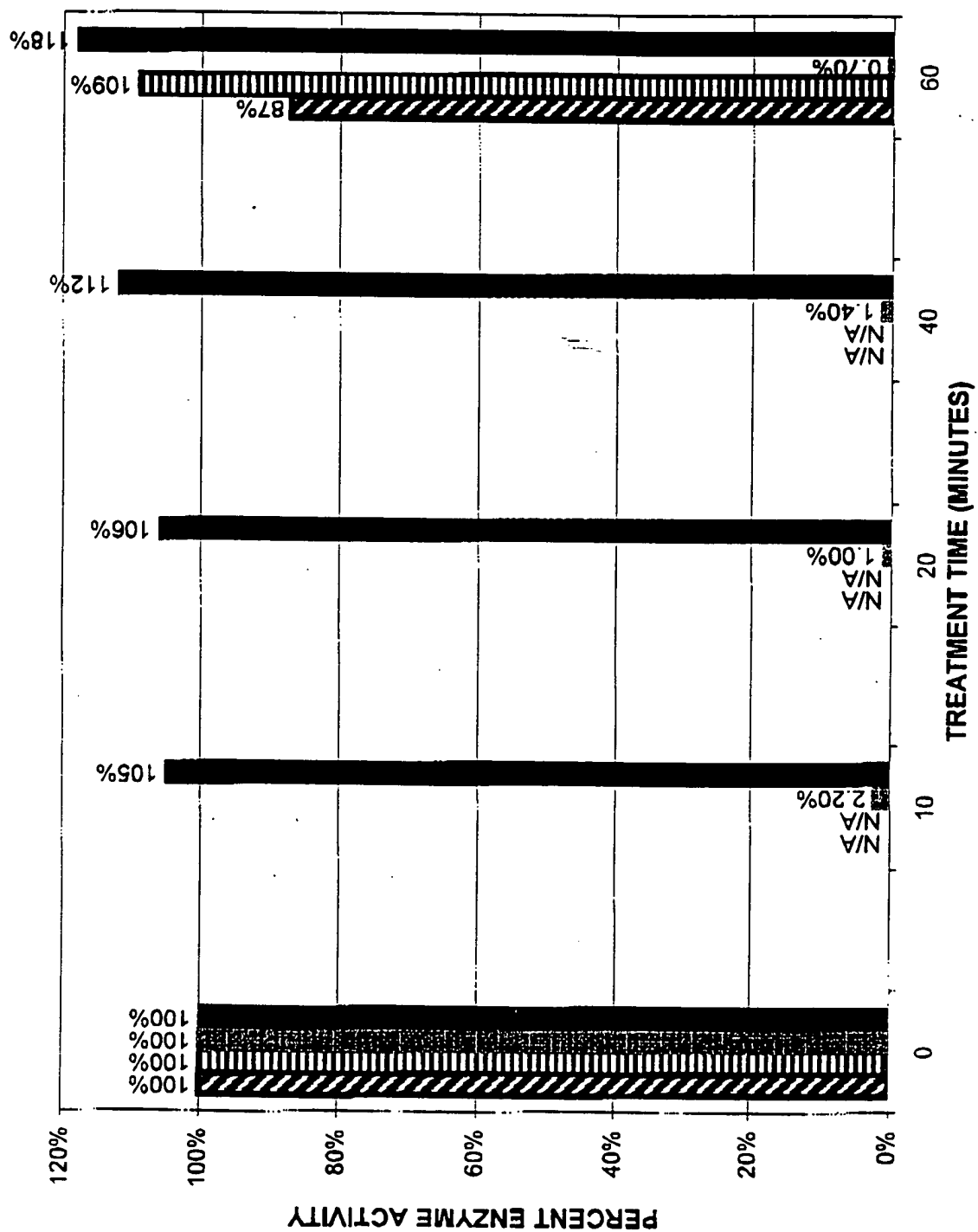


Fig. 16

004040" 12124500

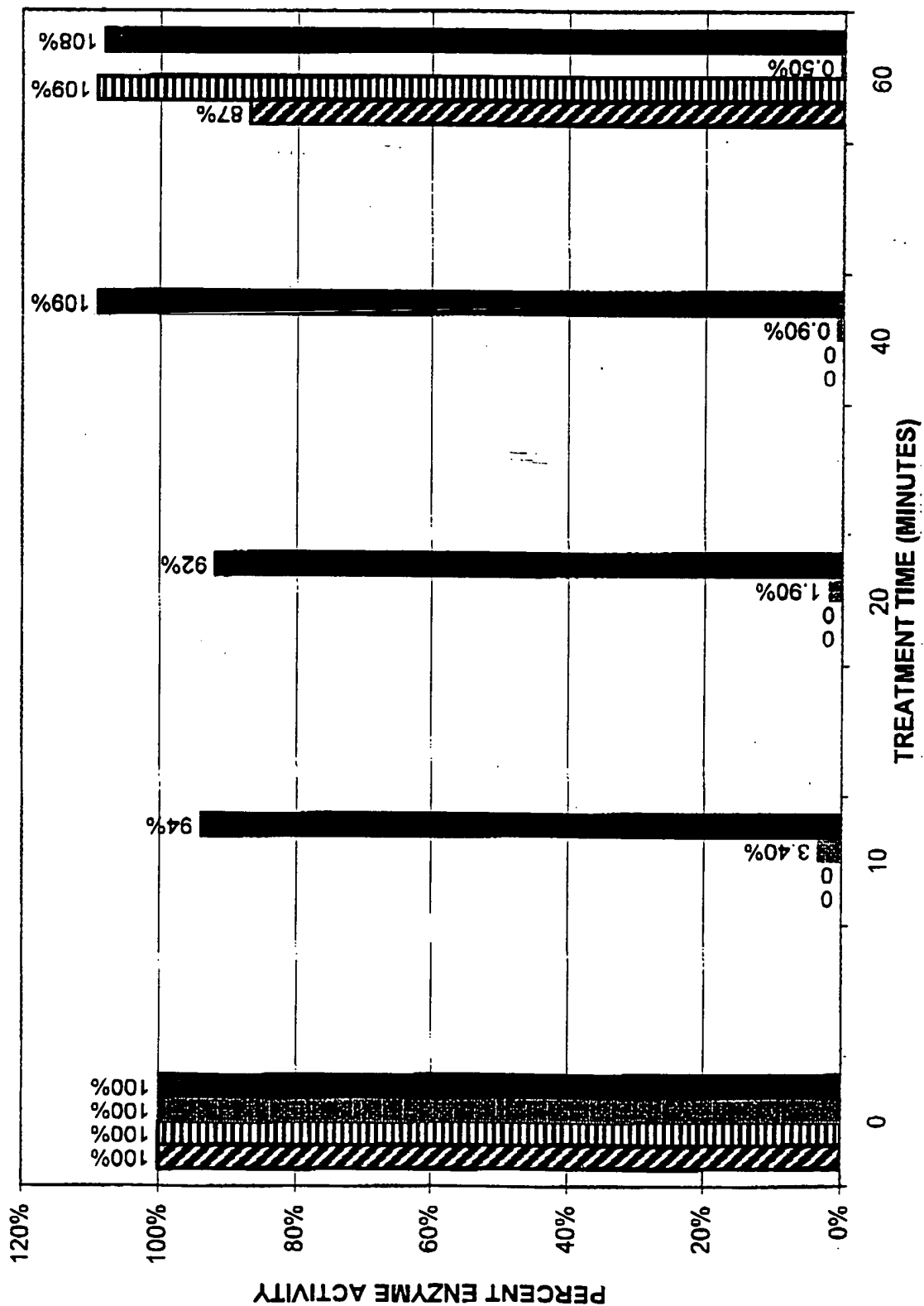


Fig. 17